

## **CHAPTER 5**

### **IN-HOUSE PAVING AND CONTRACTOR PAVING PROGRAMS**

#### **5.1 CONTRAST BETWEEN IN-HOUSE PAVING AND CONTRACTOR SERVICES**

MPW has the flexibility to choose between in-house forces and outside contractors when implementing a pavement restoration project. Such flexibility is key to the timely and efficient programming of projects in the pavement management system. Choosing between in-house and contractual services requires an understanding of the unique characteristics of each choice.

Specific work skills such as paving operations must be utilized regularly or they will be lost. Paving contractors pave continuously; their crews and equipment are skilled and well maintained. Public Works employees often perform many duties, only one of which is paving. Employees with several years experience but without recent experience are better than employees with no experience at all, but such crews will rarely be efficient when pressed into service on paving projects. The equipment is likely to need repairs, crews will need more time to mobilize, and safety issues may be more likely to arise due to lack of practice of those paving skills. Newer employees will have few opportunities to work with veteran employees.

When choosing between in-house and outside crew assignments, managers should consider the amount of interaction needed with the public, the potential for change orders, and the discretionary judgment likely needed in the field. Typically, in-house crews interact more effectively with the public than do contractual crews. Change orders can be handled more efficiently with in-house crews, and policy decisions can be made and communicated easier with in-house crews.

By contrast, projects that require longer hours during the day or work on weekends should typically be assigned to outside contractors. Likewise, projects requiring longer commitment of personnel and more coordination among crews may be accomplished more efficiently by outside crews. Finally, a large number of similar jobs may be completed faster by outside crews.

In general, outside crews are best used when a high degree of labor coordination or time commitment is involved. In-house crews are best used for complex projects involving citizen interaction, potential change orders, and policy decisions in the field. Wise choices among in-house and contractual crews will stretch pavement dollars further.

If a public works department has the appropriate equipment and skilled employees, that department should be undertaking significant paving projects each year. The annual volume of work ideally should approach the department's historic annual capacity of work. Younger employees should have mentors within the work force who will pass along the skills necessary to accomplish significant paving projects.

#### **5.2 IN-HOUSE PAVING**

The availability of an in-house paving crew is essential to any public works department that maintains public roads. In-house crews can respond on an emergency basis and significantly reduce downtime of critical roadways. In-house crews also have the flexibility to handle smaller projects, stretching resources by utilizing public staff and equipment that otherwise would not be engaged.

MPW has established paving crews that have engaged in complex paving operations for years. MPW crews have years of project experience, available and well-maintained equipment, and sufficient tools, signs, and transportation to accomplish paving tasks with no outside resources. HMAC is obtained from the batch plant using city trucks rather than relying on delivery by an outside contractor. A summary of MPW paving capabilities is located in Appendix A.

In-house crews provide tangible value that cannot be duplicated by outsourcing, and does not appear in a direct comparison of costs on a per-unit basis. When assessing the role of public works departments in paving, these additional benefits need to be considered. The ability of public works crews to respond to these circumstances, though, is directly related to those crews having a significant portion of ongoing paving projects. Keeping skills fresh and passing those skills on to new employees is vital to maintaining paving capacity in the department.

### **5.2.1 Emergency and Safety Projects**

Most paving needs develop slowly, providing time for repair or pavement preservation methods to be programmed, often years in advance. However, some repair needs are immediate and constitute an emergency condition or a significant safety need that cannot be delayed, e.g., a sinkhole or burst water main.

In theory, emergency repairs could be outsourced, using a standard hourly rate for repair. In practice, outsourcing for such work presents significant problems in terms of response time, cost, and oversight of the work. Frequent use of outsourcing for emergency and safety repairs can be expensive, even when contractors are responsive and attentive to needs.

While small cities often have no choice but to use outsourced paving crews, larger cities have too many emergency conditions to make outsourcing feasible in all circumstances. The city may have to pay a considerable penalty to get the crew to the city project. If the city demands priority at the time of bidding without penalty, contractors may bid a high unit price in order to cover unknown conditions. Either way, the city will likely pay a premium for prompt service in emergency conditions.

In-house paving crews can be diverted from another task immediately, committing as much staff and equipment as may be necessary without having to negotiate with an outside contractor. A paving crew already in the field making routine repairs on other sites can often make an emergency repair in the course of the day's work with limited disruption. A safety project can be scheduled within days, sometimes hours, of the initial repair decision being made.

### **5.2.2 Budget Constraints**

An in-house paving crew also gives an agency an opportunity to respond to critical projects during times of budget restrictions. Typically, members of a paving crew perform other tasks during the year, including right-of-way mowing and maintenance, storm drain repairs, snow removal, trash pickup along roadways, and sign placement. Such crew members can be shifted from those tasks to a paving project; in such a case, the only direct cost would be the materials and any equipment rental. Obviously, excessive diversion from other work will simply cause a backlog in those work areas, but the availability of in-house crews for paving can make a significant difference in project completion during times of budget restrictions.

The flexibility to shift resources during constrained budget periods is very helpful to public works management. When municipal budgets are restricted, funding for outsourced

capital work, including paving projects, is frequently cut or placed on hold. In contrast, the layoff of public employees is among the least used methods of budget reduction. If public works employees have multiple skills, including paving, and the appropriate equipment is available, many projects can still be completed in-house. Public works management then has the simpler task of obtaining material to get the public employees and public equipment engaged in construction work.

By contrast, a public works department with few or no employees with paving skills and aging, unreliable equipment cannot provide a significant response to paving needs during a budget crisis. Fewer projects get completed, since such work must be accomplished using contractual services. The less skilled employees are then assigned low-profile tasks, e.g., right-of-way maintenance. While such work is always needed, the department is not able to respond to the more critical paving needs of the community. Over time, the public perception of the department's value to the community will be diminished.

### **5.2.3 Time Constraints**

Some projects that do not necessarily qualify as emergency or essential safety projects may nonetheless have a tight time schedule that does not permit the normal contractual bidding schedule to be met. An accelerated utility project, work related to a major but unanticipated event, or a deadline for a grant application all may create projects that cannot wait for the next bidding schedule but would not appropriately be considered emergencies or urgent safety needs.

Such projects are well suited for public works departments to handle in-house. These projects are often complex and require on-going policy decisions. Engineering design can be accomplished quickly and given directly to public works crews, saving valuable time. Assuming timely completion has a value, the use of in-house paving crews has considerable potential to save money in such circumstances.

### **5.2.4 Citizen Interaction**

Most paving projects, especially those involving standard overlays, are accomplished with limited public involvement. Provided notification of on-street parking restrictions is made in advance and traffic control follows recognized standards, the public relations element of most paving projects can be effectively handled by the private sector.

However, some paving projects do involve a heightened level of public involvement. Typically, such projects involve cases where on-street parking is critical (for access to small businesses or high density residential areas), locations where driveway abutments require extensive adjustments, streets with critical slopes for drainage, sites at which particular pavement markings or traffic calming devices have been installed, or communities which have experienced poorly implemented projects in the past. In cases where the neighborhood sensitivity to the paving project is high, the required attention to details outside the normal scope of paving and interaction with the public is more than routinely encountered.

In such cases, the ability of the paving crew to make effective decisions consistent with department policy is very important. A paving crew not familiar with specific neighborhood needs can make mistakes that can harm the department's image as well as incur additional expense. Giving 24-hour notice for on-street parking may not be sufficient if the drivers are out of town (college students during spring break) or rarely drive (elderly residents). Restricting parking from both sides of a neighborhood business area without off-street parking on the same

day may give shoppers no parking opportunities and harm the businesses for the entire day. A paving crew that is not aware of a local drainage problem may unintentionally alter the storm water flow and create or aggravate a drainage problem. Special attention may be needed in areas with bikeways, pedestrian crossings, traffic calming devices, or other devices and markings in the pavement.

In all these cases, field decisions consistent with department policy must be made quickly. When a senior manager needs to be consulted for a policy decision, a department employee will likely be able to reach the right person faster than someone not involved in local government. If field changes or additional work are needed, the public works crew can complete the work without having to negotiate a change order. If discussions involve a citizen, the correct information is more likely to be conveyed from within the department rather than through an outside party.

Finally, the value of citizens seeing MPW staff, vehicles, and equipment at work on their street cannot be dismissed. While citizens may be appreciative in seeing a private contractor maintaining a street, those citizens may not know who is paying for the work. Giving citizens the opportunity to see their own local government employees providing services effectively has long-term public relations value for the department.

### **5.3 CONTRACTOR PAVING**

Public agencies contract for those services that are not efficient or practical to be provided in-house or which do not fit within the agency's mission. MPW is fortunate to have multiple contractors that bid on each paving project, which results in competitive paving project costs. Maintaining qualified staff and equipment to provide all of the city's paving needs would not be economical, since insufficient work would be available for the crews during portions of the year.

Municipalities in northern climates can support a larger public works staff than southern municipalities. During construction season, more people can be hired and assigned to paving crews. During winter months, the extra personnel are allocated to snow removal and winter maintenance operations. In Nashville's climate, winter work opportunities are limited, making it uneconomical to hire large numbers of people for construction season work.

Contractual operations can take two forms, a general contractor or a construction manager. A general contractor obtains quotations from several specialized subcontractors and then submits a single bid; the general contractor signs the contract, provides all bonds and insurance, and pays the subcontractor after receiving payment from MPW. A construction manager is an agent for the governmental department who administers a series of contracts with a group of specialized contractors working under the coordination of the construction manager. (The construction manager may be a government employee, an independent manager, or one of the contractors bidding on the work).

Most bids handled by MPW involve a single general contractor rather than a group of individual contractor working under a construction manager's direction. Typically, contractual operations by general contractors provide five broad advantages over in-house operations:

#### **5.3.1 Sole Responsibility**

Having a general contractor handling a pavement project provides a single point of contact for MPW. The general contractor for paving operations typically owns and operates the

hot-mix plant and owns or leases necessary equipment. The general contractor may have subcontractors for functions such as traffic control, truck transport, concrete work, utility work, paving markings, testing, and traffic loop maintenance. Because the general contractor has sole responsibility for the project, MPW officials have no need to contact subcontractors directly. Additionally, the general contractor takes responsibility for problems and addresses the issue of specific responsibility within the construction team without MPW having to be involved.

The cost savings of a general contractor are significant, since considerable MPW staff time could be involved in trying to determine which of several subcontractors was responsible for an error or delay. The general contractor builds the cost of this part of project management into the contract price, so MPW ultimately pays for the service. However, MPW personnel can then direct their time and attention to other areas rather than being involved with the details of the project operation.

Should the general contractor fail to pay a subcontractor or supplier, declare bankruptcy, or simply abandon the job, the project's payment bond is available to resolve any claims without MPW being directly liable. Should a warranty item arise which the contractor is not able or willing to resolve, the performance bond is available for use in resolving MPW's claim. An outside bonding company normally issues both the payment bond and performance bond for 100 percent of the contract value. The cost of the bonds is paid by the contractor as a condition of the contract and is built into the contract price as part of the original bid.

### **5.3.2 Productivity and Flexibility**

Private contractors typically have fewer labor regulations than public agencies. A government agency must operate under rules of civil service protection, meaning the ability to hire and fire employees is restricted and cumbersome. A private contractor can lay off employees when insufficient work is available or when the construction season ends, then rehire the desired available employees when work is available, actions that public agencies cannot consider. The retirement programs of private employers, if provided, are typically transportable 401k individual accounts, not the defined pension programs of the public sector that anticipate and reward many years of uninterrupted service with a single public agency.

Private paving contractors provide services for state, municipal, and private clients and normally have high tonnage jobs that make the use of large-scale, efficient equipment economically feasible. By contrast, a municipal public works department could not justify the cost of such equipment, even though the equipment makes a paving crew more productive.

### **5.3.3 Extended Work Hours**

As a consequence of having a different set of hiring rules, private employees can demand longer work hours during the construction season, since employees know they may be laid off in winter. That flexibility means that private contractors can operate late in the day during summer months and on weekends. When paving locations require night operations, private contractors can provide that service as well, keeping their batch plants operating as late as needed. A public works department could request but could not demand that a batch plant stay open for the convenience of MPW crews. This flexibility increases productivity on a daily and weekly basis. Contractors can pay overtime to production workers and managers as needed to keep sufficient workers on the job.

Public works employees work nights and weekends, too, but such work is normally on an emergency basis. Government agencies rarely have excess funds to pay production workers the required overtime, and government managers on fixed salaries typically must take either compensation time or simply work the hours as part of a set annual salary. Given the number of emergency circumstances that arise in the course of a year, government agencies are usually reluctant to involve public employees in extensive night and weekend work for routine projects.

#### **5.3.4 Large Project Responsiveness**

Contractors specialize in labor management and have the flexibility to optimize work production through temporary hiring, overtime work, and subcontracts with other contractors. The result of this management is fast turnaround time, often faster than the public sector, constrained by rules and policy, can provide. If a large project needs to be completed as quickly as possible, the private contractor can typically respond more quickly and efficiently than the public sector. Additionally, the work deferred by the private contractor will usually have less public consequence than that deferred by the public sector.

A quicker response time may come at a higher cost, however. Hiring and training temporary or seasonal workers is expensive. Contracts with other contractors involve overhead that will be passed on to the public sector. Increased management effort on the part of the contractor and the assumption of more cost and liability by using temporary workers, working overtime, or retaining subcontractors will result in a premium price for the work.

#### **5.3.5 Streamlined Procurement Practices**

Public agencies must follow strict procurement practices, including public biddings, detailed specifications, contract documents, and utilization of small and disadvantaged businesses. The result is an extended, complicated purchasing process that is rigid and time-consuming.

Private contractors are not required to follow the strict and complex procurement practices used by government entities. They can take advantage of bulk or repeated purchases from a long-time business associate and demand priority service as a result. They need to meet the specifications of the public contract, but their own purchasing can be done with less detailed contractual language. As a result, the private purchasing process is less time-consuming and more responsive.

### **5.4 CONTRACTOR PAVING CAPABILITIES**

Just as the capacity and skill level of MPW is vital in determining the role of the department in providing paving and milling services, the ability of private contractors to provide both routine and specialized pavement preservation services is equally important. In order to determine the capacity and skill levels of contractors, a questionnaire was developed and interviews conducted with three area contractors who bid regularly on MPW paving projects. A summary of the interviews is located in Appendix B.

Of particular interest were contractor experiences in different paving activities and the interest of the contractor to bid on certain types of work. The different project types were:

- Milling and overlay
- New construction

- Reconstruction
- Slurry seals and micro-surfacing
- Chip seals
- Fog seals, tar seals, and rejuvenators
- Crack sealing
- Pothole patching
- Spot removal and patching
- Shoulder maintenance
- Emergency road maintenance.

At least one of the companies was interested in bidding on each of the eleven categories on a group project basis. For individual street projects, at least one of the companies was interested in each of the categories except for slurry seals/micro-seals and fog seals/tar seals/rejuvenators. For yearly contracts at least one of the companies was interested in each of the eleven categories except for slurry seals/micro-surfacing. Therefore, bids for slurry and fog seal type projects on a street level basis are not likely to get responses. Slurry seals and micro-sealing will likely get bids only on a group project basis. These responses imply that the contractors will rely on outside subcontractors who will need to have work of sufficient quantity that can be done in one mobilization.

None of the three contractors has equipment for cold in-place recycling, so the three would likely not be responsive to such a bid invitation unless the quantities were extensive and the commitment to such work was on-going.

All contractors had at least one asphalt plant in Davidson County and more in surrounding counties. Stockpiles of aggregates are maintained, and contractors can develop a range of specific mixes. The contractors preferred using their own batch plants and were not very interested in having a designated material source. Given the narrow differences in unit costs by plant, little savings would appear to be achieved by using a single source. One of the contractors was not interested in laying asphalt produced by government agencies or other contractors. The other two preferred not to do so, with one indicating a higher price would result. While reasons were not articulated, most contractors would likely be concerned with quality control issues related to competitors' products and operating hours of other plants.

## **5.5 VALIDITY OF COST COMPARISONS BETWEEN IN-HOUSE AND CONTRACTOR PAVING**

A common policy question arises when comparing in-house versus contractual paving. A natural curiosity exists with respect to comparative costs. Does a private contractor pave streets at a lower cost than a public works department? If so, should private contractors always be used?

In practice, the question is not that simple. First, the full costs of paving must be determined. Second, costs savings that are passed to the public agency and which are absorbed in internal operations of the public or private sector must be identified. Finally, the non-

monetary costs, or costs that impact parties beyond the public agency and the contractor, must be quantified.

For the public agency, the true cost of paving is more than the material costs of asphalt concrete, tack coat, and stone. The cost of purchasing and maintaining equipment must be identified, even though the public sector does not track depreciation costs. An annualized cost that includes salvage value is typically used in place of depreciation. The cost of transporting material from a batch plant or quarry to a job site must be included if performed by the public sector, which includes both labor and equipment. The incremental cost of providing insurance for equipment and personnel involved in paving operations should be included. Finally, the lost opportunity cost of crews not performing other work must be evaluated when assigning public crews to paving operations.

The private contractor has a similar set of costs for materials and transport, including purchase or rental of equipment. However, the private contractor is able to take advantage of certain tax laws with respect to depreciation and other costs. Having flexibility in renting or leasing equipment means that the contractor is less likely to purchase equipment in one initial lump sum payment as do public agencies. Because the equipment is often on a lease or other contract, the private contractor has an incentive to keep such equipment productive and to trade it before high maintenance or downtime costs occur. Public agencies have to compete for capital monies within tight multi-department budgets and often have to keep equipment well beyond optimum trade times.

Performing work at a lower cost is only meaningful if the savings can be realized by the public agency. A contractor who achieves savings on a job does not normally lower the price via a change order unless the savings has been expressly identified as part of a negotiation process. A public agency that completes a job ahead of schedule benefits only if the crew can proceed to another assignment, and the realization of the savings may never be quantified and reported.

Savings can be best understood by the public and by key policy makers when one of two circumstances occur:

- Funds are returned at the end of a project which has remained within budget and expectations.
- A specific separate project was completed because of the savings and that project was known to have no funding expectation without the savings.

Returning funds from a project requires that a comparative benchmark has been established. If a public works department completes a job at a cost lower than the low bid received and the bid was rejected for being over budget, then MPW can rightly claim credit for saving money over the private sector. Likewise, a public agency that routinely meets the average unit price for work can claim to be competitive in the market place.

Care must be taken to ensure the scope of projects is comparable. A public works department that has to complete many small projects scattered throughout an urban area cannot be expected to meet the same unit price as a contractor with a few large projects in one area of the county. Likewise, a private contractor who must complete work in a short time period will incur higher cost than a public agency or another contractor who is given much longer to complete the same scope of work.



## **5.6 COMPARISON OF SELECTED UNIT PRICE COSTS FOR OUTSOURCED AND IN-HOUSE PROJECTS**

The differences between the cost of outsourced and in-house projects on a unit cost basis can be seen by a comparison of average costs for a variety of recent projects. Unit costs per item for outsourced projects obtained by sealed bid were compared with the recorded cost by work order for materials and contracted services for projects completed in house. In nearly all cases, the in-house cost is lower due to the absence of in-house labor and equipment rental costs. Since MPW has already committed those costs and would pay them regardless of whether the project is performed in-house or not, the in-house labor and equipment rental costs are not included as part of MPW's capital budget. A 30% overhead rate was included on in-house labor to account for direct overhead for employee fringe benefits.

A department's paving capacity over time is best defined by looking at the average output over several years. While a department may have the ability to place many more tons of asphalt if other tasks are delayed, the historic record is likely a realistic assessment of what the department can achieve while continuing to respond to competing needs. Unless a department has been relieved of another function or has had a new task added, the tonnage placed over the last 5 to 7 years will be the best indication of that department's capacity.

### **5.6.1 In-Place HMAC**

The most common type of HMAC used on MPW streets is Grading C-W (bid item 307-01.10). In large quantities (over 10,000 tons) outsourced unit prices ranged from \$34.30 per ton to \$37.25 per ton on recent bids. By contrast, the material cost at the batch plant when loaded onto MPW trucks is \$27.00 to \$31.00 per ton, depending on location. The cost of other virgin mixes at the plant ranged from \$25.75 to \$33.00 per ton, while the cost of recycled mixed ranged from \$24.50 to \$28.50 per ton.

A typical MPW paving crew has five employees: two equipment operators, a maintenance/right of way crew leader, and four maintenance/right of way workers. The total hourly cost for the entire crew is about \$94 plus 30 percent overhead for a total of about \$122 per hour.

Typical equipment on a paving job consists of seven units: a paver, two rollers, a pickup, and a crew cab. The total hourly rental rate assigned by MPW for the equipment is \$128.

Thus, the total committed cost for the crew and equipment is \$250 per hour. If the crew can place 80 tons per hour on a project, the committed and material cost would be \$3.13 per ton.

Transporting the material must also be considered. The typical hourly rate for a truck driver is about \$14 per hour; with 30 percent overhead that cost is \$18.20. Cost of the rental of a tri-axle truck is \$26 per hour, a total cost of \$44.20/hr. If a truck and driver can deliver an average of 15 tons per hour, the cost per ton for transport is \$2.95. When the transport cost is added to the \$27.00 material cost per ton and \$3.13 labor cost per ton, the total cost for MPW to obtain and place the asphalt is \$33.08 per ton, a very competitive rate.

In order to consistently match the lowest contractual cost of \$34.30 per ton, the MPW crew would need to place about 80 tons per hour. Since \$250 per hour divided by 80 tons per hour is \$3.13 per ton, and that amount added to the average material cost of \$27 per ton at the plant, plus the transportation cost of \$2.95 per ton produces a total of \$33.08 per ton, a savings of \$1.22 per ton.

## 5.6.2 Milling of Bituminous Pavement

Milling (cold-planing) of bituminous pavement (bid item 415-01.01) outsourced unit prices ranged from \$10.50 per ton to \$12.95 per ton for quantities over 4,000 tons on recent bids. By contrast, the cost shown by MPW is \$8.75 per ton for 24,000 tons of cold-planing.

A typical MPW milling crew has seven employees: three equipment operators, a maintenance/right of way crew leader, and three maintenance/right of way workers. The total hourly cost for the entire crew is about \$99.63 plus 30 percent overhead for a total of about \$130/hour.

Typical equipment on a milling job consists of seven units: a water truck, a milling machine, a power broom, grader, loader, a pickup, and a crew cab. The total hourly rental rate assigned by MPW for the equipment is \$257.

Thus, the total committed cost for the crew and equipment is \$3877 per hour. If the crew can mill 75 tons per hour on a project, the committed cost would be \$5.16 per ton.

Transporting the milled material must also be considered. As in the case of asphalt placement, the typical hourly rate for a truck driver is about \$14 per hour; with 30 percent overhead that cost is \$18.20. Cost of the rental of a tri-axle truck is \$26 per hour, a total cost of \$44.20. If a truck and driver can remove an average of 15 tons per hour, the cost per ton for transport is \$2.95. When the transport cost is added to the \$5.83 per ton cost, the total cost for MPW to mill and remove the asphalt is \$8.11 per ton. Since the rate as reported by MPW is \$8.75 per ton, the MPW crews appear to be milling an average of 75 tons per hour. The cost per ton is about 23 percent lower than the lowest outsourced cost.

If the contractor retains rights to the material after milling, MPW may have an additional advantage in milling, assuming it has some use for the material. Otherwise, the material has some disposal cost which must be considered.

MPW appears to be in a position to simultaneously support a paving crew and a milling crew, each handling about 75 to 80 tons per hour of asphalt. Between four and six trucks would be needed for each crew on a typical job, with at least one truck available either as backup or as supplement in heavy traffic conditions where delays occur. The requirements of each crew will vary due to many factors including production rate, location, traffic, delays from outside parties, etc. MPW has ten tri-axle trucks available for HMAC and millings transport. Many other items, such as tack oil, paving markers, traffic control, raising of manhole lids, etc., must be considered; some of these items can be handled contractually or by other departments of MPW government.

Table 5.1 gives a comparison of in-house paving versus contractor services for the two categories of paving and milling. The contractual cost represents the lowest contractual bid for any group in the most recent bidding and may not be valid for a particular group or in a future year. The comparison is for illustrative purposes only.

Table 5.1: Comparison of in-house versus contractual paving costs per unit.

Bid Item	Number of Units	In-house Cost	Outsourced Cost
307-01.10 Grading C-W In-place Asphalt	10,000 tons total; 80 tons per hour	\$33.08 per ton	\$34.30-\$37.25 per ton
415-01.01 (Cold Planing)	4,000 tons total; 80 tons per hour	\$8.11 per ton	\$10.50 to \$12.95 per ton

## **5.7 ASSIGNMENT OF A GROUP PAVING PROJECT TO MPW**

Given that MPW has the staff, equipment, and proven experience to mill and pave competitively, a full assignment of MPW staff to large-scale projects is appropriate. MPW should be assigned a full Group area, with responsibilities to mill and pave just as a private contractor would do. While comparisons of costs and quality of work may be instructive as a benchmark, the primary purpose of the assignment is the efficient utilization of existing resources within MPW.

Group 5 has the highest total need of all groups in terms of total lane miles. Assignment of MPW crews to Group 5 will enable MPW to stretch its paving dollars, since the committed cost of staff and equipment does not have to be paid directly by the road maintenance fund. Thus, the amount of road maintenance funding can be kept consistent by geographic area while MPW catches up on maintenance needs in Group 5 by using its previously committed and funded resources.

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